

Summary Minutes of the

U.S. Department of Energy (DOE) Secretary of Energy Advisory Board Public Meeting

Committee Members: John Deutch, Co-Chair; Persis Drell, Co-Chair; Albert Carnesale; Ram Shenoy; Cherry Murray; Shirley Jackson; Dan Reicher; Martha Schlicher; Rafael Bras; Albert Carnesale; Dan Yergin; Deborah Jin; Michael McQuade; John Podesta

Date and Time: 8:00 AM- 12:15 PM, December 3, 2013

Location: Lawrence Livermore National Laboratory, 7000 East Avenue, Livermore, California 94550

Purpose: Meeting of the Secretary of Energy Advisory Board (SEAB)

SEAB Staff: Amy Bodette, Designated Federal Officer; Karen Gibson; Deputy Designated Federal Officer; Mackenzie Huffman, Deputy Designated Federal Officer

DOE Staff: Secretary Ernest Moniz and Deputy Administrator Anne Harrington

Meeting Summary

This was the second meeting of the new membership of the Secretary of Energy Advisory Board (SEAB). SEAB members heard opening remarks by Secretary Moniz and the Co-Chairs John Deutch and Persis Drell. The members were then briefed by Lawrence Livermore National Laboratory staff on topics of interest to SEAB task forces. Task Force Chairs briefed the full Board on their activities. They also received a briefing on the Department of Energy/National Nuclear Security Administration's Office of Defense Nuclear Nonproliferation Program from Deputy Administrator, Anne Harrington.

Opening of Public Meeting

Secretary Moniz opened the meeting by mentioning the extraordinary slate of candidates nominated for leadership positions at the Department of Energy. The nominees include: General Frank Klotz and Madeline Creedon for NNSA; Franklin "Lynn" Orr for Under Secretary for Science and Energy; Mark Kastner for Director of the Office of Science; Beth Robinson as Under Secretary for Management and Performance; and Ellen Williams as ARPA-E Director. This group has a broad set of experiences and perspectives which uniquely qualify these nominees. There are a number of issues that the Secretary would like SEAB to address, including Technology Transfer and Infrastructure Resiliency. The Co-Chairs added a few topics to the list including: Advanced Manufacturing/Technology; Business Model for Utilities; and Commercialization and the Venture Capital Community. The Co-Chairs gave an update about the status of the Task Forces. Charges have been issued for the following Task Forces: Quadrennial Energy Review, New Funding Constructs for Energy Research (HUBS +), and FracFocus 2.0. New Funding Constructs for Energy Research and Frac Focus 2.0 will complete their work in March of 2014. Charges are in draft for two additional Task Forces, High Performance Computing and Nuclear

Nonproliferation. The Secretary expects SEAB to meet quarterly and will rotate locations between DOE Headquarters in DC and Laboratories with the next meeting in March in DC.

LLNL Presentation on Capabilities Supporting a Clean and Secure Energy Future

A.J. Simon of Lawrence Livermore National Laboratory detailed the national laboratories role in assisting and supporting the Quadrennial Energy Review. NREL polled the competencies of the labs and with the help of Argonne National Lab, formed a working group. The working group is in regular contact with DOE. Dr. Simon highlighted areas in which the Labs can be helpful to the effort. His presentation is available at www.energy.gov/seab.

LLNL Presentation on High Performance Computing Applications

Fred Streitz, Director of Lawrence Livermore National Laboratory's High Performance Computing Center, gave a presentation on the lab's high performance computing capabilities. High performance computing is critical in filling gaps in knowledge and key to discovering things not previously known. It allows scientists to extend their eyes and can be applied broadly across the sciences. Dr. Streitz's presentation can be found at www.energy.gov/seab.

Reports of Task Force Chairs

QER Task Force Chair, Paul Joskow, reported that the charge for the Task Force has been issued. The Task Force will provide advice and assistance to the QER, including guiding the scope and the choices of analytical techniques and models. The QER will focus on infrastructure. There are nine SEAB members that are participating on the Task Force and seven external members. The SEAB members include Joskow, Beinecke, Jackson, Koonin, Reicher, Schlicher, Drell (ex-officio), Deutch (ex-officio), and Yergin (ex-officio). The external members of the Task Force include John Hess, (Hess), William Hogan, (Harvard), W. David Montgomery (NERA), Donald Santa (Interstate Natural Gas Association of America), Steven Specker (Formerly EPRI), Susan Tierney (Analysis Group), and Coleman Jones (GM). The external members were chosen for their variety of perspectives and their expertise in infrastructure. The White House has not yet issued a final QER directive. It could potentially be signed by the middle of December. Dr. Joskow will continue to speak with DOE's EPSA staff regarding how the Task Force can be helpful. DOE and the interagency process need to continue to get organized in order to meet the schedule of the QER. The Task Force plans to meet in January.

Cherry Murray, Chair of the New Funding Mechanisms Task Force, updated the Board on the progress of the Task Force. This Task Force will evaluate the management and early progress of the new management and funding mechanisms of the Department: Energy Frontier Research Centers (EFRCs), Energy Innovation Hubs (Hubs), Bioenergy Research Centers (BRC), and the Advanced Research Projects Agency-Energy (ARPA-E). There are three main questions that the Task Force will address: Are there gaps in the DOE approach to energy, science, technology innovation, and impact on industry development and deployment; Is the DOE effectively drawing on the resources of the labs, academia and industry, including entrepreneurial startups; Is this suite of new management and funding mechanisms proving effective; Are they complementary? There are nine SEAB members on the Task Force including Murray, Schlicher, Jin, Roberts, Bras, Shenoy, Drell (ex-officio), Deutch (ex-officio), and Jackson (ex-officio). The external members of the Task Force include Chris Sommerville (UC Berkeley), Uma Chowdry (Dupont), John Wall (Cummins), Maxine Savitz (National Academy of Engineering), Chad Mirkin (Northwestern), Robert Karlicek (Rensselaer Polytechnic Institute) and Mark Little (General Electric). The Task Force has had three resource collection and review conference calls. In person meetings are scheduled for December 3rd and 4th and January 8th and 9th.

The High Performance Computing Task Force is being co-chaired by Shirley Ann Jackson and Michael McQuade. DOE is currently the largest funder of high performance computing technology. This task force will examine the how and why of DOE's engagement. The task force will review the current capabilities and ultimately help the Department of Energy understand where we are in high performance computing and what is necessary to meet the nation's high performance computing needs. They will look at drivers in four core areas: national security issues, basic science research, data centric applications, and other DOE missions (including other agencies and industrial applications). On the technology readiness side they will examine hardware, enabling science and technology, and business issues. Another major question to be addressed is timing. Membership of the task force will represent a variety of opinions and perspectives. A report will be made to the full SEAB in June 2014.

The newly formed FracFocus 2.0 Task Force will be chaired by John Deutch. FracFocus 2.0 is a registry of fracking fluids maintained by the Groundwater Protection Council and the Interstate Oil and Gas Compact Commission. Senator Ron Wyden of Oregon has requested a review of FracFocus 2.0. SEAB members that will participate in this Task Force are Deutch (chair), Beinecke, Bras, Shenoy and Yergin. External members of the Task Force are Stephen Holditch (Texas A&M), Fred Krupp (Environmental Defense Fund), and Susan Tierney (Analysis Group). The Task Force will hold a public meeting in January. This will be a short term review with plans for the Task Force to report their findings at the March meeting.

Presentation on the Office of Defense Nuclear Proliferation

Anne Harrington, Deputy Administrator for Defense Nuclear Nonproliferation (DNN), gave an overview of DOE/NNSA Nuclear Non-Proliferation Programs. Her presentation included organizational context, descriptions of the programs, and a look to the future. DNN now has a global reach beyond Russia and the program has changed to meet the expanded mission. However, they are operating at 60% of where they hoped to be and have had to adjust priorities accordingly. Ms. Harrington's full presentation is available at www.energy.gov/seab.

Public Comment

No Public Comment

Chair Wrap-Up

Co-Chair Persis Drell adjourned the meeting and noted that the next meeting would take place on March 28th, 2014 at U.S. Department of Energy Headquarters in Washington, DC.

Meeting adjourned at 12:15 PM.

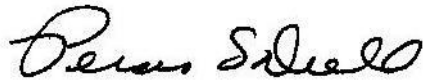
Respectfully Submitted:

Designated Federal Officer

I hereby certify that these minutes of the December 3, 2013, SEAB meeting are true and correct to the best of my knowledge.

A handwritten signature in black ink, reading "John Deutch". The signature is written in a cursive style with a large, looped "J" and a stylized "D".

John Deutch
Co-Chair

A handwritten signature in black ink, reading "Persis Drell". The signature is written in a cursive style with a large, looped "P" and a stylized "D".

Persis Drell
Co-Chair